NEW SPECIES OF *RHODAMNIA* JACK (MYRTACEAE) FROM AUSTRALIA

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Summary

Rhodamnia dumicola, R. whiteana and R. glabrescens are described and a key to the Australian species of Rhodamnia is provided. An emended description of R. costata is given.

The genus *Rhodamnia* Jack has recently been revised by Scott (1979) who described eight new species including *R. costata* A.J. Scott from eastern Queensland. On examining the type collection (Hyland 7940) of *R. costata* and material at BRI placed by Scott under this name, it was obvious that there was more than one taxon within his concept of this species. We have recognised three species within Scott's broad interpretation of *R. costata*. In fact, *R. costata* as circumscribed by us does not have costate fruit, the basis for Scott's specific epithet.

We have maintained *Rhodamnia spongiosa* (Bailey)Domin as being distinct from *R. glauca* Bl. New Guinea material held at BRI and cited by Scott (*loc. cit.*) as *R. glauca* includes two taxa. Until we examine the type of *R. glauca* and other New Guinea material of this species, we are hestitant to accept that *R. spongiosa* is conspecific with *R. glauca*.

Rhodamnia propinqua C. White was treated by Scott (loc. cit.) as a variety of R. blairiana F. Muell. Although these two taxa have superfically similar leaves they are quite distinct species. R. blairiana differs from R. propinqua by its ovate-lanceolate leaves which are 3-veined above the base, stouter and shorter pedicels, and coarser tomentum on the flowers and inflorescences.

Material of a further new species was brought to our attention by Mr W.J. McDonald in 1980. Flowering and fruiting material of this species was recently obtained through the generosity of Mr N. Gibson enabling it to be formally described.

The leaf descriptions are based on dried material, although *R. glabrescens*, *R. whiteana* and *R. dumicola* were studied in the field. The floral and fruit descriptions are based on material preserved in spirit or reconstituted material. Inflorescence terminology follows that of Briggs and Johnson (1979), leaf terminology follows that of Hickey (1973) and ecological terminology follows that of Webb (1978).

Rhodamnia dumicola Guymer & Jessup, sp. nov.

Differt a *R. costata* A.J. Scott baccis 7-9-lobis depressio globularibus, inflorescentiis post foliis, habitatione et habitu. **Typus**: *ca* 1 km SE of Pine Mtn, rd to Worlds End Pocket, N of Ipswich, 9 Dec 1981, *Guymer* 1654 & *Jessup* (holotypus BRI, isotypi BRI, CANB, CBG, DNA, K, L, MEL, MO, NE, NSW, SING).

Small trees or shrubs 3-6 m; bark grey, rough, slightly flaky. Branchlets terete with pale grey bark, puberulent when young, glabrescent. Lamina ovate or slightly obovate, glabrous above, hoary below, (30-) 35-60 mm long, (18-) 22-42 mm wide; apex acuminate, obtuse, rounded or retuse; base attenuate, decurrent; oil glands dense, 1-5 per areole; primary veins 3, suprabasal perfect acrodromous, laterals 0.5-3 mm from margin (up to 5 mm on juvenile leaves); secondary veins 11-20 pairs; tertiary venation distinct and slightly raised above, obscure below except on young leaves; midrib sunken above, raised below; petiole glabrous or puberulent, channelled above, 5-10 mm long. Inflorescences ramal and lower axillary, fasciculate, monads or triads, 6-10 mm long; axes puberulent; peduncles 2-4 mm long; pedicels 1-5 mm long; metaxyphylls and prophylls ovate, puberulent, persistent or sub-persistent, 0.4-0.8 mm long. Flowers 4-merous; perigynium sparsely puberulent, 1.5-2 mm long and 1.9-2.1 mm diam. at anthesis. Calyx lobes semi-elliptic, obtuse, sparsely puberulent, ciliate, 1-1.3 mm long, 1.5-1.8 mm wide.

Petals white, ovate, concave, glabrous except ciliate margins, 3-3.5 mm long, 2.8-3 mm wide. Stamens ca 90; filaments white, 2.5-3 mm long, ca 0.1 mm diam. Ovary with 2 placentas; ovules 26-28. Style glabrous, white, 4.5-4.8 mm long, ca 0.4 mm diam. Berry depressed-globular in outline, 7-9-lobed, initially yellow ripening to orange-red, finally dark purple or black, (8.5-) 10-12 mm diam., 6-7 mm long. Seeds 1-8 (-11), angular, reniform, (2-) 3-4 mm long. Fig. 1A-D.

Flowering period: November to January.

Fruiting period: April to May.

Distribution: The species is endemic in south-eastern Queensland from Dawes Range State Forest (latitude 24°30′S) to Bahr's Scrub, S of Beenleigh (latitude 27°48′).

Queensland. PORT CURTIS DISTRICT: State Forest 67, Bulburin, ca 3 km S of Bulburin Forestry Station, Jul 1978, McDonald 2408 & Stanton (BRI), vicinity of Forest Station, Apr 1980, McDonald 3242, Fisher & Ryan (BRI). WIDE BAY DISTRICT: Splitter's Ck, ca 6 km W of Bundaberg on Gin Gin rd, Oct 1984, Jessup 590 (BRI); Fraser Island, May 1921, White (BRI); Pialba, Oct 1921, White (BRI); Bellevue Scrub, Dundowran, Jul 1928, Tryon (BRI); 0.5 km W of Grassy Mtn, ca 5 km SSW of Bauple, Dec 1982, Guymer 1836 & Dillewaard (BRI); Theebine, Nov 1921, White (BRI); Kin Kin (W of "Lower Pine"), Dec 1919, Francis (BRI); Imbil, Dec 1943, Clemens (BRI), BURNETT DISTRICT: Valley & Duck Logging areas, State Forest 289, Neumgna, ca 16 km W of Yarraman, Apr 1978, Jessup 104 & McDonald (BRI). MORETON DISTRICT: Kilcoy, without date, England (BRI); near Crow's Nest, Feb 1944, Clemens (BRI); Opossum Logging area, State Forest 283 Colinton, Apr 1978, Jessup 90 & McDonald (BRI); Splityard Ck, Wivenhoe Dam, Dec 1983, Bird (BRI), Ward's Scrub, W of Samford, near headwaters of South Pine R., Dec 1983, Jessup 574 & Guymer (BRI), Jessup 573 & Guymer (BRI, L); Betts Rd, Samford, Nov 1984, Guymer 1913 (BRI, NSW, K, L, QRS, CBG, DNA); Worlds End Pocket, Pine Mtn rd, N of Ipswich, Dec 1981, Guymer 1653 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, NE, NSW, MEL), Guymer 1678 & Jessup (BRI, CANB, K, MEL, NE); Pine Mtn, N of Ipswich, May 1978, Williams 78059 (BRI), June 1978, Williams 78059 (BRI), June 1978, Wi

Habitat: R. dumicola occurs in notophyll or microphyll vine thickets or low vine forests, often in association with Araucaria cunninghamii, from near sea-level to 400 m altitude.

Affinities: R. dumicola has affinities with R. costata and R. whiteana but differs in its 7-9-lobed berry, its ramal inflorescences and its smaller flowers. The species occurs in lowland rainforest communities with a mean annual rainfall (M.A.R.) of 900-1200 mm whereas both R. costata and R. whiteana occur in montane rainforests (750-1200 m) with a M.A.R. in excess of 1500 mm.

The specimens of Clemens from Imbil and Mt Bauple cited by Scott (1979) under R. costata are R. dumicola. Scott's description of the fruit of R. costata was based on the Clemens specimen of R. dumicola from Imbil.

This is the species referred to by Stanley & Ross (1986) as Rhodamnia sp. 1.

Etymology: The specific epithet is derived from dumo (thicket) and cola (dweller) referring to the species' habitat.

Rhodamnia whiteana Guymer & Jessup, sp. nov.

Differt a R. costata A.J.Scott foliis lanceolatis, inflorescentiis majoribus floribus majoribus et baccis majoribus. Typus: Mt Cordeaux, just below summit, Moreton District, Queensland, 23 Dec 1981, Guymer 1658 & Jessup (holotypus BRI, isotypi BRI, CANB, CBG, K, L, MEL, MO, NE, NSW, QRS).

Trees 6–18 m; bark dark brown to black, finely longitudinally fissured. Branchlets terete with brown and grey striped bark, puberulent when young, glabrescent. Lamina elliptic, lanceolate or ovate-lanceolate, rarely ovate, glabrous above, hoary below, (4–) 5–9.5 cm long, (1.2–) 1.5–3 cm wide; apex acuminate or acute; base attenuate, decurrent; oil glands dense, 1–5 per areole; primary veins 3, suprabasal perfect acrodromous, laterals 1–3 mm from margin; secondary veins 13–17 pairs; tertiary venation obscure and flush above, distinct and flush below; petiole channelled above, 4–7.5 mm long. Inflorescences axillary, 1 or 2 per axil, triads or metabotryoids, 3–9-flowered, 15-30 mm long; axes puberulent; peduncles 5–9 mm long; pedicels 2–6 mm long; pherophylls and metaxyphylls ovate to narrowly triangular, concave, puberulent, caducous or persistent, 0.8–3.5 mm long, 0.5–1 mm wide. Flowers 4-merous; perigynium hoary, 3–3.5 mm long and 2.8–3.1 mm diam. at anthesis; calyx lobes semi-elliptic, obtuse, hoary, ciliate, persistent, 2.5–3 mm long, 2.3–2.8 mm wide. Petals white, reflexed, obovate, concave, ciliate, sparsely puberulent

outside, 6.5–7.5 mm long, 4–5.5 mm wide. Stamens 100–110; filaments white, 4–6 mm long, ca 0.1 mm diam. Ovary with 2 placentas; ovules 76–80. Style puberulent, 7–8 mm long, 0.25–0.5 mm diam. Berry globular, initially yellow, ripening to red, finally dark purple to black, crowned by hoary calyx lobes, 12–13 mm long, 10.5–13 mm diam. Seeds 6–10 (–18) [1–7 viable], angular, reniform, fawn, 3.5–5 mm long. Germination phanerocotylar. **Fig. 1E–G.**

Flowering period: December to January.

Fruiting period: February to May.

Distribution: The species is restricted to the Great Dividing Range from Mt Mistake in south-eastern Queensland to Mebbin Rock in north-eastern New South Wales between 750 and 1200 m altitude.

Queensland. Moreton District: Mt Mistake, Jun 1887, Bailey [BRI 292776] (BRI), without date, Shirley [BRI 292775] (BRI); Mistake Mtns, May 1948, Smith & White 3600 (BRI), Oct 1920, White [BRI 292774] (BRI), Mt Cordeaux, May 1961, Smith 11307 (BRI), 15 Nov 1969, Smith [BRI 309209] (BRI); Mt Cordeaux, just below summit, Dec 1981, Guymer 1658 & Jessup (BRI, P, DNA), Guymer 1659 & Jessup (BRI, CANB, CGB, K, L, MEL, MO, NE, NSW, QRS), Guymer 1660 & Jessup (BRI, NOU, A, SING, BO), Guymer 1660a & Jessup (BRI), Mar 1982, Guymer 1680 & Jessup (BRI, CANB, DNA, K, MO, NSW). DARLING DOWNS DISTRICT: Mts near Emu Vale, Nov 1922, Francis [BRI 292773] (BRI); Forest Reserve 400, ca 22 mls [38 km] SE of Warwick, Apr 1962, Smith 11478a (BRI). Without location, without date, Simmonds [BRI 11494] (BRI). New South Wales. NORTH COAST: Mebbin Rock, Jul 1981, Floyd (BRI).

Habitat: R. whiteana occurs in montane complex notophyll vine forest on basalt.

Affinities: R. whiteana is most closely related to R. costata and differs by its lanceolate leaves with primary lateral veins 1-3 mm from the margin, larger inflorescences and flowers, hoary perigynium and calyx lobes and its larger berries.

The specimens of Constable [NSW 24351] (NSW) and Simmonds [BRI 11495] (BRI) cited by Scott (1979) under R. costata are referable to R. whiteana.

This is the species referred to by Stanley & Ross (1986) as Rhodamnia sp. 2.

Etymology: The specific epithet commemorates Cyril Tenison White (1890–1950), Queensland Government Botanist (1917–1950), who made significant contributions to the taxonomy of Queensland plants. He described two new species of *Rhodamnia* in his treatment of this genus (White 1937).

Rhodamnia costata A.J. Scott, Kew Bulletin 33: 453 (1979). Type: Bridle logging area, State Forest Reserve 607, Jan 1975, *Hyland* 7940 (holotype, not seen, isotype BRI, QRS).

Trees 16–25 m; bark fissured and flaky. Branchlets terete with brown or grey bark, puberulent when young, glabrescent. Lamina ovate or elliptic, glabrous above, hoary below, 4–7 cm long, 2-3.5 cm wide; apex slightly acuminate, obtuse; base attenuate, decurrent; oil glands dense, 1–4 per areole; primary veins 3, suprabasal perfect acrodromous, sunken above, raised below, laterals 2–4 mm from margin; secondary veins 8–13 pairs; tertiary venation obscure, except on abaxial surfaces of young leaves; petiole channelled above, 4–8 mm long. Inflorescences axillary and ramal, monads or triads, 12–18 mm long; axes puberulent; peduncles up to 8 mm long; pedicels 1–3 mm long; pherophylls and metaxyphylls persistent or deciduous, ovate, puberulent, 0.6–1.2 mm long. Flowers 4-merous; perigynium glabrous, 2–3 mm long and 2–2.5 mm diam. at anthesis; calyx lobes semicircular, glabrous except for ciliate margins, 1–1.6 mm long, 1.5–2 mm wide. Petals white and tinged with pink towards base, sparsely puberulent outside, ciliate, obovate, 4–6.5 mm long, 3.5–5 mm wide. Stamens 106–115; filaments white, 3–6 mm long. Ovary with 2 placentas; ovules 62–67. Style puberulent, pink, 5.7–6.2 mm long. Berry globular, glabrous, red, crowned by calyx lobes, 5–7 mm long, 6–8 mm diam. Seeds 3–6, reniform, 3–4 mm long.

Flowering period: December to January.

Fruiting period: April to May.

Distribution: R. costata occurs from the Mt Windsor Tableland, to the Clarke Range, NW of Mackay, in north-eastern Queensland between 760 and 1100 m altitude.

Queensland. Cook District: State Forest Reserve 144, Windsor Tbld, Nov 1971, Hyland RFK 2558 (QRS), Oct 1975, Hyland RKF 3361 (QRS), Apr 1976, Hyland RKF 3410 (BRI, QRS), Jan 1977, Hyland 9276 (BRI, QRS), Jul 1978, Hyland RFK 3737 (QRS), RFK 3738 (QRS), Oct 1979, Moriarty 2690 (QRS), Jun 1976, Sanderson 1074 (QRS), Jun 1979, Sanderson 1632 (QRS); Bridle logging area, State Forest Reserve 607, Dec 1974, Hyland RFK 3141 (QRS), Jan 1975, Hyland 7940 (BRI, QRS); State Forest Reserve 194, Sep 1968, Hyland RFK 1974 (QRS), May 1979, Risley 576 (QRS); Mt Spec, Mar 1933, White 8964 (BRI), Apr 1979, Frith RF55 (QRS); State Forest Reserve 268, Cloudy logging area, Jul 1968, Hyland RFK 1598 (QRS). SOUTH KENNEDY DISTRICT: Cathu State Forest, 8 km SW of Cathu, Nov 1981, Young (BRI); Clarke Ra., Cathu, Apr 1983, Dansie s.n. (QRS); Eungella Ra., Sep 1938, White 12958 (BRI); Dalrymple Hts, ca 37 miles [62 km] W of Mackay, Aug 1965, Martin & Gould s.n. (BRI); near Crediton Parish, Dalrymple Hts, Oct-Nov 1947, Clemens s.n. (BRI).

Habitat: The species occurs in montane simple notophyll vine forest on granites.

Affinities: The species is most closely related to *R. whiteana* but differs by its ovate leaves with the primary lateral veins 2-4 mm from the margin, smaller inflorescences and flowers, glabrous perigynium and calyx lobes and smaller berries.

Rhodamnia glabrescens Guymer & Jessup, sp. nov.

R. maidenianae C. White proxima cujus inflorescentias, folia glabra, habitum et corticem habet. Differt domatiis, venatione foliorum, floribus et innovationibus puberulis. Typus: State Forest 67 Bulburin, 23 May 1985, N. Gibson 733 (holotypus BRI, isotypus BRI).

Shrubs or small spindly trees 2-4.5 m; bark brown, flaky. Branchlets terete or slightly quadrangular, with brown bark peeling off in strips; shoot apices and buds appressed sericeous. Lamina ovate to ovate-lanceolate, glabrous or with scattered appressed hairs, 6-10.5 cm long, 2-5 cm wide; apex acuminate, acute; base attenuate, decurrent; oil glands sparse and only in vicinity of midrib; domatia present as pockets at junction between primary veins, glabrous; primary veins 3, suprabasal perfect acrodromous, sunken above, raised below; secondary veins 8-12 pairs; tertiary venation distinct and raised above, obscure below except on young leaves; petiole puberulent, glabrescent, channelled above, 3-5 (-6) mm long. Inflorescences axillary, fasciculate, triads or monads, 10-13 mm long; axes puberulent, glabrescent; peduncles up to 3 mm long; pedicels 4-6 mm long; pherophylls and metaxyphylls puberulent, lanceoate, persistent or deciduous, 1.5-2 mm long. Flowers 4-merous; perigynium sparsely appressed-puberulent, 2-2.5 mm long and 1.9-2.2 mm diam. at anthesis; calyx lobes ovate, ciliate, sparsely appressed-puberulent, glabrescent, 3-3.5 mm long, 2.2-2.8 mm wide. Petals white, obovate to broadly obovate, ciliate, 5.5-6 mm long, 4-5 mm wide. Stamens 78-86; filaments mauve, 3-3.5 mm long, ca 0.1 mm diam. Ovary with 2 placentas; ovules 32-35. Style glabrous, 4.5-5.5 mm long. Berry globular, smooth, dull red, 4-7 mm diam., 4-9 mm long, crowned by erect calyx lobes ca 3 mm long. Seeds 2 or 3, reniform, flattened, (3-) 4-4.5 mm long. Fig. 1H & I.

Flowering period: May.

Fruiting period: July to August.

Distribution: R. glabrescens is only known from Dawes Range State Forest (previously State Forest 67, Bulburin) in the upper catchment of Granite Creek and Boyne River at altitudes of 200 to 500 m.

Queensland. PORT CURTIS DISTRICT: Granite Ck, 0.5-1 km NW of Boobook Ck junction, State Forest 67, Bulburin, Dec 1982, Guymer 1820 & Dillewaard (BRI, NSW), Guymer 1817 & Dillewaard (BRI); Boyne Logging area, Bulburin State Forest, Apr 1980, McDonald 3160, Fisher & Ryan (BRI); State Forest 67, Bulburin, ca 24 km W of Lowmead, Jul 1978, McDonald 2368 (BRI, CANB), May 1985, Gibson 733 (BRI), Aug 1985, Gibson 5.n. (BRI).

Habitat: The species occurs in complex notophyll vine forest.

Affinities: R. glabrescens is perhaps most closely related to R. maideniana which also has glabrous leaves, similar inflorescences, habit and bark. Nevertheless, it differs from this species by its sericeous flowers and shoot apices, leaf venation and sparse oil glands in the leaves.

Etymology: Named from the Latin *glabrescens* in reference to the almost glabrous inflorescences and leaves.



Fig. 1. Rhodamnia dumicola: A. flower and bud (Guymer 1654 & Jessup) × 3. B. flowering branchlet (Guymer 1654 & Jessup) × 1. C. fruiting branchlet (Guymer 1678 & Jessup) × 1. D. mature fruits (Guymer 1678 & Jessup) × 1. R. whiteana: E. flowering branchlet (Guymer 1658 & Jessup) × 3. G. fruiting branchlet (Guymer 1680 & Jessup) × 1. H. R. glabrescens: fruiting branchlet (Gibson s.n.) × 1. I. flowering branchlet (Gibson 733) × 1.

Key to Australian Species of Rhodamnia

	Leaves glabrous or with scattered hairs along the veins below
2.	Inflorescences ramal; flowers and fruits in sessile NE Qld
3.	Primary lateral veins (3-) 4-6 mm from margin; oil glands sparse, in vicinity of midrib. Subcoastal central Qld
	Primary lateral veins 1-3(-4) mm from margin; oil glands dense. SE Qld & NE NSW
4.	Leaves, inflorescence axes and flowers sericeous
5.	Primary lateral veins 3-12 mm from margin; leaves ovate-acuminate. Coastal SE Qld
	Primary lateral veins 1-3 mm from margin; leaves ovate or elliptic. NT & N Qld
6.	Abaxial leaf surface hoary
7.	Petals glabrous or sparsely puberulent outside
8.	Inflorescences ramal or lower axillary. Berries depressed globular, 7-9-lobed. SE Qld
	Inflorescences axillary. Berries globular, not lobed
9.	Inflorescences 15-30 mm long, metrabotryoids or triads; calyx lobes hoary. Leaves lanceolate (length:breadth 2.3-4.1:1); primary lateral veins 1-3 mm from margin. SE Qld & NE NSW
	Inflorescences 12–18 mm long, monads or triads; calyx lobes glabrous. Leaves ovate or ovate-lanceolate (length:breadth 1.7–2.4:1); primary lateral veins 2–4 mm from margin. NE Qld
10.	Lamina 3-veined from the base; primary lateral veins 4-6 mm from margin. Petals 3-4 mm long. SE Qld & NE NSW
	Lamina 3-veined above the base; lateral veins 5-13 mm from margin. Petals 5-7 mm long. NE Qld
11.	Flowers and abaxial leaf surfaces ferruginous villous with crinkled hairs; placentas 3 (or 2). NE Qld
	Flowers glabrous or sparsely pubescent; abaxial leaf surfaces white or grey pubescent; placentas 2
12.	Inflorescences triads or botryoids; leaf pubescence of erect hairs; leaves 7-9 cm long, 3-4 cm wide. SE Qld & E NSW R. rubescens (Benth.)Miq.
	Inflorescences monads; leaf pubescence of appressed and erect hairs; leaves 3-6 cm long, 1,8-3.2 cm wide, E central Old

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